

CLAIMS

1. A pressure sensor comprising plural sensor sections arranged in a matrix, wherein

each of the sensor sections includes:

a first electrode disposed in a sensor section;

a first insulating film covering the first electrode;

a sensor hole formed in the first insulating film and, also, exposing part of the first electrode;

a cavity located at least above the exposed first electrode; and

a second electrode disposed opposite to the first electrode with the cavity interposed therebetween and, also, capable of being curved to the first electrode side.

2. The pressure sensor according to claim 1, wherein

the first electrode includes:

a central electrode portion located at almost the center of the sensor section;

and

an annular portion located in the sensor section and, also, formed so as to enclose the central electrode portion.

3. The pressure sensor according to claim 1, wherein

the first insulating film has at least one recess on the first electrode in addition to a sensor hole thereon.

4. The pressure sensor according to claim 1, wherein

an end edge of the first insulating film is located at the periphery of the first

electrode.

5. The pressure sensor according to claim 1, wherein
a thickness of the first insulating film present at the periphery of the sensor
hole is in the range of about 2000 to about 5000 angstroms.

6. The pressure sensor according to claim 1, wherein
the sensor hole is in the shape of a circle and a diameter thereof is in the range
of about 5 to about 40 μm .

7. The pressure sensor according to claim 1, wherein
the end edge of the first insulating film rising from a surface of the first
electrode located below the cavity is inclined to the first electrode.

8. The pressure sensor according to claim 1, wherein
release holes are disposed in the second electrode so as to correspond to the
peripheral portion of the first electrode.

9. The pressure sensor according to claim 1, wherein
a second insulating film is stacked on the second electrode, and the second
insulating film in the vicinity of the center of the sensor section is removed to form an
opening.

10. The pressure sensor according to claim 9, wherein
the removed portion of the second insulating film in the sensor section is in the

shape of a circle and a diameter thereof is in the range of about 24 to about 28 μm .

11. The pressure sensor according to claim 9, wherein
an overcoat film is formed on the second electrode in the opening.

12. The pressure sensor according to claim 11, wherein
the overcoat film is made of a material different from that of the second
insulating film.

13. The pressure sensor according to claim 11, wherein
the second insulating film is formed with an inorganic insulating film, and the
overcoat film is formed with an organic insulating film.

14. The pressure sensor according to claim 11, wherein
the surface of the overcoat film in the central portion of the sensor section is
flat.

15. A method for fabricating a pressure sensor comprising plural sensor
sections arranged in a matrix, the method comprising the steps of:

forming a first electrode in the sensor section;

forming a first insulating film on the first electrode;

removing the first insulating film present in the center of the first electrode;

forming an intermediate layer on the first insulating film;

forming a second electrode on the intermediate layer;

forming a second insulating film on the second electrode;

removing the intermediate layer to form a cavity; and
removing the second insulating film present in the central portion of the sensor section to form an opening.

16. The method for fabricating a pressure sensor according to claim 15, comprising the steps of:

forming an overcoat film at least in the central portion of the second electrode;
forming the second insulating film on the overcoat film; and
removing the second insulating film present in the central portion of the second electrode to form an opening.

17. The method for fabricating a pressure sensor according to claim 15, comprising the steps of:

forming release holes in the second insulating film and the second electrode so as to overlap the first electrode;
removing the intermediate layer through the release holes; and
closing the release holes after removal of the intermediate layer.

18. The method for fabricating a pressure sensor according to claim 15, comprising the step of:

post-baking the overcoat film at a temperature in the range of about 250 to about 300°C.